

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1 through 42 (Cancelled)

43. (Previously Submitted) A method for generating oxygen, the method comprising:
- providing a vessel having a compartment for a chemical reaction;
 - adding a liquid to the compartment wherein the liquid comprises water and a dissolved limiting reactant, wherein the limiting reactant is selected from the group consisting of sodium percarbonate ($2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$) powder and sodium perborate (NaBHO_3);
 - dissolving a catalyst in the liquid after adding the liquid to the compartment to produce a chemical reaction to generate an oxygen flow, wherein the catalyst is selected from the group consisting of an iron compound, iron oxide, a copper compound, and copper oxide;
 - adding a heat absorbing compound to the compartment, wherein the heat absorbing compound is a combination of a manganese compound and sodium-based compound;
 - sealing the compartment to withstand an internal pressure created by the chemical reaction,
 - controlling the oxygen flow by varying the amount of the limiting reactant;
 - controlling the oxygen flow by varying the amount of the catalyst;
 - directing the oxygen flow through a humidifier;
 - varying the amount of humidity of the oxygen flow in the humidifier;
 - varying the amount of temperature of the oxygen flow in the humidifier;
 - generating an aqueous solution of soda ash in the compartment; and

directing the oxygen flow to a usage device through an output line.

44. (Previously Submitted) A method for generating oxygen, the method comprising:
providing a vessel having a compartment for a chemical reaction;
adding water to the compartment;

simultaneously dissolving a limiting reactant and a catalyst in the water after adding the water to the compartment, wherein the limiting reactant is selected from the group consisting of sodium percarbonate ($2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$) powder and sodium perborate (NaBHO_3) and the catalyst is selected from the group consisting of an iron compound, iron oxide, a copper compound, and copper oxide;

adding a heat absorbing compound to the compartment, wherein the heat absorbing compound is a combination of a manganese compound and sodium-based compound;

sealing the compartment to withstand an internal pressure created by the chemical reaction,

controlling the oxygen flow by varying the amount of the limiting reactant;
controlling the oxygen flow by varying the amount of the catalyst;
directing the oxygen flow through a humidifier;
varying the amount of humidity of the oxygen flow in the humidifier;
varying the amount of temperature of the oxygen flow in the humidifier;
generating an aqueous solution of soda ash in the compartment; and
directing the oxygen flow to a usage device through an output line.

45. (Previously Submitted) A method for generating oxygen, the method comprising:
providing a vessel having a compartment for a chemical reaction;
adding water to the vessel;

adding a limiting reactant of water soluble powder to the vessel, wherein the water soluble powder is selected from the group consisting of sodium percarbonate ($2\text{Na}_2\text{CO}_3 \cdot 3\text{H}_2\text{O}_2$) powder and sodium perborate (NaBHO_3);

adding a catalyst to the vessel, wherein the catalyst is selected from the group consisting of an iron compound, iron oxide, a copper compound, and copper oxide;

adding a heat absorbing compound to the vessel, wherein the heat absorbing compound is a combination of a manganese compound and sodium-based compound;

adding the water soluble powder, the catalyst, the heat absorbing compound to the compartment to produce a chemical reaction to generate an oxygen flow from the compartment;

sealing the compartment to withstand an internal pressure created by the chemical reaction,

controlling the oxygen flow by varying the amount of the limiting reactant;

controlling the oxygen flow by varying the amount of the catalyst;

directing the oxygen flow to a humidifier;

varying the amount of humidity in the oxygen flow in the humidifier;

varying the amount of temperature of the oxygen flow in the humidifier;

generating an aqueous solution of soda ash in the compartment; and

directing the oxygen flow to a usage device through an output line.